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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
HUANG, WEN WU	
ART UNIT	**PAPER NUMBER**
2618	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/773,287	PALIN ET AL.	
	Examiner	Art Unit	
	Wen W. Huang	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 21 May 2007.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-25 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-25 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/21/07 has been entered.

Claims 1-25 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1, 2, 6, 10-12, 15 and 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adachi (US. 6,256,334 B1) in view of Hlasny (US. 6,603,799 B1) and Giannakis et al. (US. Pub No. 2005/0105594 A1; hereinafter "Giannakis")

Regarding **claim 1**, Adachi teaches a method in a wireless communications device (see Adachi, fig. 3), comprising:

(a) identifying a frequency hopping pattern associated with at least one remote short-range wireless communications network (see Adachi, fig. 6, S1 and S2; col. 17, lines 49-53; detecting a FH pattern and timing of another radio LAN 10 in the vicinity);

(b) based on the identified frequency hopping pattern in the at least one remote short-range wireless communication network, selecting a frequency hopping pattern for communications in a local short-range wireless communications network (see Adachi, fig. 6, S3; col. 17, lines 53-56);

(c) based on the identified frequency hopping pattern, selecting a timing for the selected frequency hopping pattern (see Adachi, fig. 6, S4; col. 17, lines 57-59); and

(d) communicating the selected frequency hopping pattern and timing to the local short-range wireless communication (see Adachi, fig. 6, S5; col. 17, line 59-60 and col. 17, line 66 – col. 18, line 7).

Adachi is silent to teaching that comprising:

(a) identifying a frequency hopping pattern via measuring energy level in a plurality of frequency bands operating in the Ultra Wide Band (UWB) of 3.1 Ghz to 10.6 Ghz; and

(c) selecting a timing based on the measured energy level.

In the same field of endeavor, Hlasny teaches a method in a wireless communication device (see Hlasny, abstract) comprising

(a) identifying a frequency hopping pattern via measuring energy level in a plurality of frequency bands (see Hlasny, col. 4, line 58 - col. 5, line 1, PF1, PF2 and PF3); and

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Adachi and the teaching of Hlasny in order to efficiently identifying potentially interfering frequency hopping pattern (see Hlasny, col. 2, lines 23-33).

Hlasny teaches identifying the interfering frequency hopping pattern and timing based on the measured energy level and Adachi teaches selecting a timing based on the identified interfering frequency hopping pattern and timing. Thus, the combination of Adachi and Hlasny teaches (c) based on the identified frequency hopping pattern, selecting a timing for the selected frequency hopping pattern based on the measured energy level (see Adachi, col. 17, lines 57-59 and Hlasny, col. 4, line 63 – col. 5, line 1).

The combination of Adachi and Hlasny is silent to teaching frequency hopping in a plurality of frequency bands operating in the Ultra Wide Band (UWB) of 3.1 Ghz to 10.6 Ghz. However, the claimed limitation is well known in the art as evidenced by Giannakis.

In the same field of endeavor, Giannakis teaches frequency hopping in a plurality of frequency bands operating in the Ultra Wide Band (UWB) of 3.1 Ghz to 10.6 Ghz (see Giannakis, para. [0039]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Adachi and Hlasny and the teaching of Giannakis in order improve system capacity of the short-range wireless communications network (see Giannakis, para. [0015], lines 1-5).

Regarding **claim 2**, the combination of Adachi, Hlasny and Giannakis also teaches the method of claim 1, further comprising: transmitting one or more symbols according to the selected frequency hopping pattern and the selected timing (see Adachi, fig. 1, component 52; col. 11, lines 41-51).

Regarding **claim 6**, the combination of Adachi, Hlasny and Giannakis also teaches the method of claim 1, wherein the identified frequency hopping pattern and the selected frequency-hopping pattern are the same (see Adachi, fig. 6, S4; col. 17, lines 53-56).

Regarding **claim 10**, the combination of Adachi, Hlasny and Giannakis teaches the method of claim 1, further comprising: directing one or more remote wireless communications devices to employ the selected frequency hopping pattern (see Adachi, col. 17, line 66 – col. 18, line 7).

Regarding **claim 11**, Adachi teaches a system (see Adachi, fig. 3), comprising:

means for identifying a frequency hopping pattern associated with at least one remote short-range wireless communications network (see Adachi, fig. 6, S1 and S2; col. 17, lines 49-53; detecting a FH pattern and timing of another radio LAN 10 in the vicinity);

means for selecting a frequency hopping pattern for communications in a local short-range wireless communications network based on the identified frequency

hopping pattern in the at least one remote short-range wireless communication network (see Adachi, fig. 6, S3; col. 17, lines 53-56);

means for selecting a timing for the selected frequency hopping pattern based on the identified frequency hopping pattern (see Adachi, fig. 6, S4; col. 17, lines 57-59); and

means for communicating the selected frequency hopping pattern and timing to the local short-range wireless communication (see Adachi, fig. 6, S5; col. 17, line 59-60 and col. 17, line 66 – col. 18, line 7).

Adachi is silent to teaching that comprising:

means for identifying a frequency hopping pattern via measuring energy level in a plurality of frequency bands operating in the Ultra Wide Band (UWB) of 3.1 Ghz to 10.6 Ghz; and

means for selecting a timing for the selected frequency hopping pattern based on the measured energy level.

In the same field of endeavor, Hlasny teaches a system (see Hlasny, abstract) comprising

means for identifying a frequency hopping pattern via measuring energy level in a plurality of frequency bands (see Hlasny, col. 4, line 58 - col. 5, line 1, PF1, PF2 and PF3); and

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Adachi and the teaching of

Hlasny in order to efficiently identifying potentially interfering frequency hopping pattern (see Hlasny, col. 2, lines 23-33).

Hlasny teaches identifying the interfering frequency hopping pattern and timing based on the measured energy level and Adachi teaches selecting a timing based on the identified interfering frequency hopping pattern and timing. Thus, the combination of Adachi and Hlasny teaches means for selecting a timing for the selected frequency hopping pattern based on the measured energy level (see Adachi, col. 17, lines 57-59 and Hlasny, col. 4, line 63 – col. 5, line 1).

The combination of Adachi and Hlasny is silent to teaching frequency hopping in a plurality of frequency bands operating in the Ultra Wide Band (UWB) of 3.1 Ghz to 10.6 Ghz. However, the claimed limitation is well known in the art as evidenced by Giannakis.

In the same field of endeavor, Giannakis teaches frequency hopping in a plurality of frequency bands operating in the Ultra Wide Band (UWB) of 3.1 Ghz to 10.6 Ghz (see Giannakis, para. [0039]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Adachi and Hlasny and the teaching of Giannakis in order improve system capacity of the short-range wireless communications network (see Giannakis, para. [0015], lines 1-5).

Regarding **claims 12, 15 and 19**, the dependent apparatus claims are interpreted and rejected for the same reasons as set forth above in method claims 2, 6 and 10, respectively above.

Regarding **claim 20**, Adachi teaches a wireless communications device (see Adachi, fig. 3), comprising:

a carrier sensing module configured to monitor transmissions in a plurality of frequency bands (see Adachi, fig. 1, components 58 and 59; col. 13, lines 50-60);

a timing controller (see Adachi, fig. 1, component 50) configured to transmit scan messages inquiring about neighborhood networks and frequency hopping patterns they employ (see Adachi, col. 12, lines 22-32) and select from scan responses a frequency hopping pattern for a local short-range wireless network based on a frequency hopping pattern of a remote short-range wireless communications network detected by the carrier sensing module (see Adachi, fig. 6, S3; col. 17, lines 53-56);

the timing controller further (see Adachi, fig. 1, components 50c and 50d) configured to transmit signals to control one or more transmission times according to the selected frequency hopping pattern based on a timing detected in a frequency band by the carrier sensing module (see Adachi, col. 13, lines 50-60); and

a transceiver (see Adachi, fig. 1, components 51, 52 and 53), responsive to the transmit signals (see Adachi, fig. 1, component 50c), configured to transmit data at the one or more data transmission times according to the selected frequency hopping pattern (see Adachi, fig. 6, S5; col. 17, line 59-60 and col. 17, line 66 – col. 18, line 7).

Adachi is silent to teaching transmissions in a plurality of frequency bands operating in the Ultra Wide Band of 3.1 Ghz to 10.6 Ghz and the timing controller configured to transmit signals to control one or more transmission times based on energy levels detected in a frequency band.

In the same field of endeavor, Hlasny teaches a wireless communication device (see Hlasny, abstract) wherein detecting a timing of the remote short-range wireless communication network based on energy levels detected (see Hlasny, col. 4, line 58 - col. 5, line 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Adachi and the teaching of Hlasny in order to efficiently identifying potentially interfering frequency hopping pattern and timing (see Hlasny, col. 2, lines 23-33).

Hlasny teaches detecting a timing of a remote network based on measured energy level and Adachi teaches controlling one or more transmission times based on a timing detected. Thus, the combination of Adachi and Hlasny teaches the timing controller configured to transmit signals to control one or more transmission times based on energy levels detected in a frequency band by the carrier sensing module (see Adachi, col. 17, lines 57-59 and Hlasny, col. 4, line 63 – col. 5, line 1).

The combination of Adachi and Hlasny is silent to teaching transmissions in a plurality of frequency bands operating in the Ultra Wide Band of 3.1 Ghz to 10.6 Ghz. However, the claimed limitation is well known in the art as evidenced by Giannakis.

In the same field of endeavor, Giannakis teaches transmissions in a plurality of frequency bands operating in the Ultra Wide Band of 3.1 Ghz to 10.6 Ghz (see Giannakis, para. [0039]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Adachi and Hlasny and the teaching of Giannakis in order improve system capacity of the short-range wireless communications network (see Giannakis, para. [0015], lines 1-5).

Regarding **claim 21**, the combination of Adachi, Hlasny and Giannakis also teaches the wireless communications device of claim 20, wherein the transceiver is further configured to transmit the selected frequency hopping pattern to one or more devices in the local short-range wireless network (see Adachi, fig. 6, S5; col. 17, line 59-60 and col. 17, line 66 – col. 18, line 7).

Regarding **claim 22**, the combination of Adachi, Hlasny and Giannakis also teaches the wireless communications device of claim 21, wherein the transceiver is further configured to transmit the selected frequency hopping pattern to the one or more devices in the local short-range wireless network in a beacon transmission (see Adachi, col. 1, lines 30-32).

Regarding **claim 23**, Adachi teaches a wireless communications device (see Adachi, fig. 3), comprising:

a carrier sensing module configured to monitor transmissions in one or more frequency bands (see Adachi, fig. 1, components 58 and 59; col. 13, lines 50-60);

a timing controller (see Adachi, fig. 1, component 50) generating scan messages inquiring about neighborhood networks and frequency hopping patterns they employ (see Adachi, col. 12, lines 22-32) and configured to control one or more transmission times according to a frequency hopping pattern based on a timing detected in a frequency band by the carrier sensing module (see Adachi, col. 13, lines 50-60); and

a transceiver (see Adachi, fig. 1, components 51, 52, 53, 58 and 59) configured to receive the frequency hopping pattern from a device in the local short-range wireless communications network (see Adachi, fig. 1, components 58 and 29), and to transmit data at the one or more data transmission times according to the frequency hopping pattern (see Adachi, fig. 6, S5; col. 17, line 59-60 and col. 17, line 66 – col. 18, line 7).

Adachi is silent to teaching transmissions in a plurality of frequency bands operating in the Ultra Wide Band of 3.1 Ghz to 10.6 Ghz and the timing controller configured to control one or more transmission times based on energy levels detected in a frequency band.

In the same field of endeavor, Hlasny teaches a wireless communication device (see Hlasny, abstract) wherein detecting a timing of the remote short-range wireless communication network based on energy levels detected (see Hlasny, col. 4, line 58 - col. 5, line 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Adachi and the teaching of

Hlasny in order to efficiently identifying potentially interfering frequency hopping pattern and timing (see Hlasny, col. 2, lines 23-33).

Hlasny teaches detecting a timing of a remote network based on measured energy level and Adachi teaches controlling one or more transmission times based on a timing detected. Thus, the combination of Adachi and Hlasny teaches the timing controller configured to control one or more transmission times based on energy levels detected in a frequency band by the carrier sensing module (see Adachi, col. 17, lines 57-59 and Hlasny, col. 4, line 63 – col. 5, line 1).

The combination of Adachi and Hlasny is silent to teaching transmissions in a plurality of frequency bands operating in the Ultra Wide Band of 3.1 Ghz to 10.6 Ghz. However, the claimed limitation is well known in the art as evidenced by Giannakis.

In the same field of endeavor, Giannakis teaches transmissions in a plurality of frequency bands operating in the Ultra Wide Band of 3.1 Ghz to 10.6 Ghz (see Giannakis, para. [0039]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Adachi and Hlasny and the teaching of Giannakis in order improve system capacity of the short-range wireless communications network (see Giannakis, para. [0015], lines 1-5).

Regarding **claim 24**, the combination of Adachi, Hlasny and Giannakis also teaches the wireless communications device of claim 23, wherein the transceiver is

further configured to receive the frequency hopping pattern in a beacon transmission (see Adachi, col. 1, lines 30-32).

2. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Adachi and Fleek et al. (US. 5,533,025; hereinafter "Fleek")

Regarding **claim 25**, Adachi teaches a method in a wireless communications device (see Adachi, fig. 3), comprising:

generating scan messages inquiring about neighborhood networks and frequency hopping pattern they employ (see Adachi, col. 12, lines 22-32);

monitoring transmissions in one or more frequency bands of a plurality of channels (see Adachi, fig. 1, components 58 and 59; col. 17, lines 35-40);

based on the monitored transmissions, determining
a plurality of unique time frequency codes (TFC) for each of a plurality of networks (see Adachi, col. 18, lines 22-26);

selecting one of the unique TFC for use in a local short-range wireless communications network based on a TFC of a neighbor remote wireless communications network (see Adachi, see col. 18, lines 27-34); and

distributing information regarding the selected TFC to one or more remote devices within the local short-range wireless communications network (see Adachi, fig. 6, S5; col. 17, line 59-60 and col. 17, line 66 – col. 18, line 7).

Adachi is silent to teaching that

determining whether the wireless communications device needs to transmit data within the local short-range wireless communications network; and

monitoring one or more of the frequency bands to designate a transmission timing for the data. However, the claimed limitation is well known in the art as evidenced by Fleek.

In the same field of endeavor, Fleek teaches a method in wireless communication device comprising:

determining whether the wireless communications device needs to transmit data within the local short-range wireless communications network (see Fleek, col. 5, lines 31-33); and

monitoring one or more of the frequency bands to designate a transmission timing for the data (see Fleek, col. 5, lines 34-39 and 48-49).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Adachi with the teaching of Fleek in order to maintain frequency hopping synchronization and avoid collision (see Fleek, col. 2, lines 55-59).

3. Claims 4, 5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adachi, Hlasny and Giannakis as applied to claims 1 and 11, respectively above, and further in view of Fleek.

Regarding **claim 4**, the combination of Adachi, Hlasny and Giannakis teaches the method of claim 1.

The combination of Adachi, Hlasny and Giannakis is silent to teaching that wherein step (c) comprises:

identifying a low energy condition in the frequency band; and

designating a starting time for the selected frequency hopping pattern during the low energy condition. However, the claimed limitation is well known in the art as evidenced by Fleek.

In the same field of endeavor, Fleek teaches a method in a wireless communications device, comprising:

identifying a low energy condition in the frequency band (see Fleek, col. 5, lines 31-34); and

designating a starting time for the selected frequency hopping pattern during the low energy condition (see Fleek, col. 5, lines 34-39 and 48-49).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Adachi, Hlasny and Giannakis with the teaching of Fleek in order to maintain frequency hopping synchronization and avoid collision (see Fleek, col. 2, lines 55-59).

Regarding **claim 5**, the combination of Adachi, Hlasny and Giannakis teaches the method of claim 1.

The combination of Adachi, Hlasny and Giannakis is silent to teaching that wherein step (c) comprises:

monitoring transmissions in a frequency band;

identifying a low energy condition in the frequency band; and

designating a starting time for the selected frequency hopping pattern during the low energy condition. However, the claimed limitation is well known in the art as evidenced by Fleek.

In the same field of endeavor, Fleek teaches a method in a wireless communications device, comprising:

monitoring transmissions in a frequency band (see Fleek, col. 6, lines 44-46);

identifying a low energy condition in the frequency band (see Fleek, col. 5, lines 31-34); and

designating a starting time for the selected frequency hopping pattern during the low energy condition (see Fleek, col. 5, lines 34-39 and 48-49).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Adachi, Hlasny and Giannakis with the teaching of Fleek in order to maintain frequency hopping synchronization and avoid collision (see Fleek, col. 2, lines 55-59).

Regarding **claim 14**, the apparatus claim is interpreted and rejected for the same reason as set fort above in claim 5.

4. Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adachi, Hlasny and Giannakis as applied to claims 2 and 11, respectively above, and further in view of Ryan (US. 6,333,937 B1).

Regarding **claim 3**, the combination of Adachi, Hlasny and Giannakis teaches the method of claim 2.

The combination of Adachi, Hlasny and Giannakis is silent to teaching that wherein the one or more symbols are OFDM symbols. However, the claimed limitation is well known in the art as evidenced by Ryan.

In the same field of endeavor, Ryan teaches a method in a wireless communications device wherein the one or more symbols are OFDM symbols (see Ryan, col. 3, lines 35-41).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Adachi, Hlasny and Giannakis with the teaching of Ryan in order to improve the performance of the wireless communication (see Ryan, col. 3, lines 43-54).

Regarding **claim 13**, the apparatus claim is interpreted and rejected for the same reason as set forth above in claim 3.

5. Claims 7-9 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adachi, Hlasny and Giannakis as applied to claims 1 and 11, respectively above, and further in view of Lyle et al. (US. Pub No. 2005/0058181 A1; hereinafter "Lyle")

Regarding **claim 7**, the combination of Adachi, Hlasny and Giannakis teaches the method of claim 1.

The combination of Adachi, Hlasny and Giannakis is silent to teaching that wherein the selected timing provides for no collisions between the identified frequency hopping pattern and the selected frequency hopping pattern. However, the claimed limitation is well known in the art as evidenced by Lyle.

In the same field of endeavor, Lyle teaches that wherein the selected timing provides for no collisions between the identified frequency hopping pattern and the selected frequency hopping pattern (see Lyle, para. [0032], lines 6-10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Adachi, Hlasny and Giannakis with the teaching of Lyle in order to improve communication quality and reduce data collision as suggested by Adachi (see Adachi, col. 4, lines 5-10).

Regarding **claim 8**, the combination of Adachi, Hlasny and Giannakis teaches the method of claim 1.

The combination of Adachi, Hlasny and Giannakis is silent to teaching that wherein the identified frequency hopping pattern and the selected frequency hopping

pattern are different. However, the claimed limitation is well known in the art as evidenced by Lyle.

In the same field of endeavor, Lyle teaches that wherein the identified frequency hopping pattern and the selected frequency hopping pattern are different (see Lyle, para. [0038], lines 1-5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Adachi, Hlasny and Giannakis with the teaching of Lyle in order to improve communication quality and reduce data collision as suggested by Adachi (see Adachi, col. 4, lines 5-10).

Regarding **claim 9**, the combination of Adachi, Hlasny, Giannakis and Lyle teaches the method of claim 8, wherein the selected timing provides for minimal collisions between the identified frequency hopping pattern and the selected frequency hopping pattern (see Lyle, para. [0034], lines 16-19).

Regarding **claims 16-18**, the dependent apparatus claims are interpreted and rejected for the same reasons as set forth above in method claims 7-9, respectively above.

Response to Arguments

Applicant's arguments with respect to claims 1, 11, 20, 23 and 25 have been considered but are moot in view of the new ground(s) of rejection.

In response to Applicant's argument that Adachi's frequency hopping pattern with multiple frequency channels within a single frequency band is different than the instant application's frequency hopping pattern with multiple frequency bands with in the Ultra Wide Band, the Examiner respectfully disagrees. More specifically, the Examiner submits that both frequency channel and frequency band are referring to a range of frequency. Thus, frequency channel reads on frequency band.

In response to Applicant's argument that Adachi does not teach designating a starting time based on a low energy condition, the Examiner respectfully disagrees. Firstly, the Examiner submits that claim 1 of the instant application does not require designating a starting timing based on a low energy condition. Instead, claim 1 of the instant application merely requires designating a starting timing based on a measured energy level. Secondly, the Examiner submits that Adachi teaches designating a starting timing based on a timer and a measured RF energy level crossing a threshold so that the transmission at the designated starting timing is free of interference and transmission collision.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wen W. Huang whose telephone number is (571) 272-7852. The examiner can normally be reached on 10am - 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew D. Anderson can be reached on (571) 272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

wwh WM
7/30/07

MATTHEW ANDERSON
SUPERVISORY PATENT EXAMINER